

## SOMETHING ABOUT BALLOONS.

It is a remarkable fact that, while it is just two hundred years since the first machine for navigating the air was constructed by the Jesuit Francis Lana, we are now seemingly no nearer the solution of the difficult problem of aérostation than were the good people of the seventeenth century. The air still refuses, as it did of old, to be made a highway for other created beings than the fowls thereof. It is true that we have an account in classic mythology of a successful flight aforetime by one Daedalus, accompanied by his son Icarus, who, being a "fast young man of the period," and soaring too near the sun, came to grief by the melting of the wax which served to attach his wings; but the very name of the ancient aeronaut is suggestive of distrust, as manifestly but another form of Diddle-us, and the whole story of his escape from Crete by flying is referable to that chapter of aéronautics which treats of the rides of the arch-enemy of mankind upon the whirlwind and the sailing of the witches through the air on broomsticks.

Many years after Lana, one Retif de la Bretonne devoted himself to the investigation of the subject of flying, and proposed to achieve this result by means of wings, fitted artistically to the shoulders, and an umbrella attached to the head, as represented in the picture of "The Flying Man."

It will be seen that a basket, intended for provisions, was attached to the waist of the adventurer, to nourish if not to sustain him in the long voyages he proposed to accomplish. He is represented by the artist as in the act of launching himself into the airy element from the top of a beetling cliff as a favorable point of departure. We have no definite information whether Retif de la Bretonne ever attempted to demonstrate in person the feasibility of his little scheme, but we may be well

assured that, if he did, the experiment was speedily followed by a funeral. There is in the picture a pyramidal elevation of some kind, which terminates in a very sharp point, and stands conveniently near for impalement, and it is probable enough that Retif, if he did indeed make the essay at flying, with his wings and "gingham umbrella," transfixed himself upon it, and there remained until taken down for interment.

A long interval elapsed between the chimerical project of Retif de la Bretonne and the construction of balloons, and here we may remark upon another striking fact, that in the



THE FLYING MAN.



THE DESTRUCTION OF CHARLES'S BALLOON.

very city from which the first ascent was made by man in a balloon, the inhabitants now rely solely upon balloons for their communication with the outer world, from which they have been cut off by siege. It was from the gardens of La Muette, in the immediate environs of Paris, that the first aerial voyage was performed, and the daring aeronauts looked down from their dizzy elevation on many of the same towers and domes that were seen by Monsieur Gambetta when he made his recent memorable trip from the Tuilleries to Tours.

Before advertiring, however, to this first balloon journey, it is necessary to say something of the two remarkable men by whose skill and perseverance the practicability of rising into the higher regions of the atmosphere was at length established.

Stephen and Joseph Montgolfier were the sons of a rich paper manufacturer at Annonay, a little town in the Department of Ardeche, fifty miles from Lyons. Without the advantage of a liberal education, the brothers had paid much attention to the exact sciences, Stephen excelling in the mathematics, and Joseph, the younger, directing his studies chiefly to chemistry and natural philosophy. Joseph is spoken of by

those who knew him as a man of great modesty and simplicity of character, and of engaging personal qualities; and though his name is now known mostly in association with the paper fire-balloon, which has become only a child's toy, he has many other claims to remembrance as a scientific man, and it is to him that the world is indebted for the valuable discovery of the hydraulic ram.

In the autumn of 1782, Joseph Montgol-



THE BROTHERS MONTGOLFIER.

first made a small paper balloon, which rose by heated air to the roof of his apartment; and in the summer of the following year, after a second and more satisfactory trial in the open air, the two brothers sent up a very large and strong balloon filled with smoke. This last rose to a considerable height, and fell without injury at the distance of a mile and a half from the spot where it ascended.

It may be readily supposed that the wonderful achievement of the brothers Montgolfier created in the little humdrum provincial town of Annonay the wildest enthusiasm, which soon spread with the fame of it to Paris. An official report had been prepared in due form and sent to the Academy of Sciences, and that learned body had appointed a commission to inquire into the facts of the case. But while the savans were discussing the new machine, many persons, eagerly desirous of rivaling Montgolfier, had set to work making balloons, and one of them, Professor Charles, proposed to employ hydrogen gas, then only recently discovered, as the lifting agent. Assisted by two practical men, the brothers Robert, he opened a subscription for the means necessary to carry out his plan. The most illustrious men in Paris subscribed liberally; the balloon, composed of strips of silk, coated with varnish, was soon made, and the process of inflation was conducted with the best results at the workshop of the brothers Robert.

The Champ de Mars had been selected by Professor Charles as the place for setting it off, and the half-inflated balloon was transported thither by night, for the better security of so frail a structure against the pressure of the excited multitude. Mounted patrols, with flaming torches, preceded it. The Champ de Mars was closely guarded by troops. Notwithstanding the inconvenient hour, the streets were crowded with people, upon whom the mysterious and theoric pomp of the removal



BALLOON OF THE MARQUIS D'ARLANDERS.

made a wonderful impression. But the precautions were effectual, and the balloon reached the Champ de Mars in safety.

The following day, amid the tumultuous plaudits of an immense concourse, and to the peal of artillery, it ascended to a great height, and was soon lost to view in clouds that poured a deluging rain upon the enthusiastic spectators. Before it had drifted to a considerable distance it exploded, in consequence of the expansion of the hydrogen gas, and fell to the ground.

Fortunate Professor Charles! that he was not the first venturesome man to ascend into the air, for had he come down ever so softly with the burst balloon, it would have been all up with him indeed. The startled peasants,

who saw the balloon falling from the skies, collected their brethren and assailed it with pitchforks, flails, and scythes; the dogs snapped at it, the boys stoned it, a garde-champêtre fired his gun at it, a fat curé in gown and bands preached at it, which combined attack had inevitably been the death of Professor Charles, had he followed the fortunes of his balloon instead of remaining comfortably in Paris to receive the congratulations of *tout le monde*.

But the time had now come for the first aerial voyage, and this was magnificently performed by the intrepid Roziers, who had zealously taken up the subject of aérostation from the earliest announcement of Montgolfier's success,\* and the Marquis d'Arlandes, a fine gentleman of the Court, who wrote an interesting account of the perilous and unprecedented trip. The balloon of the Marquis, which was inflated with heated air, and not with hydrogen gas, far exceeded our modern balloons in magnificence of decoration and elegance of equipment, and must have presented a splendid appearance as it rose above the temples and columns of Paris in the lovely October sunset. It made the entire circuit of the capital, passing over the boulevards and hovering always in sight of the vast crowds of wonder-loving Parisians, now fairly intoxicated by the brilliant spectacle. There were eyes that marked its course with other feelings than gratified curiosity or unreasoning delight. Among the faces turned upward to the sky above Paris on that 21st of October, 1783, was Benjamin Franklin's.

Henceforward for many months all France, so soon to become convulsed in revolution, went wild upon the subject of balloons. Ascensions were made in every part of the kingdom, and hundreds of people of both

\* As Roziers was the pioneer of balloon ascents, so he was the first victim. In attempting to cross the Channel from France to England his balloon took fire, and he was dashed in pieces on the rocks near Boulogne.



THE MINERVA.

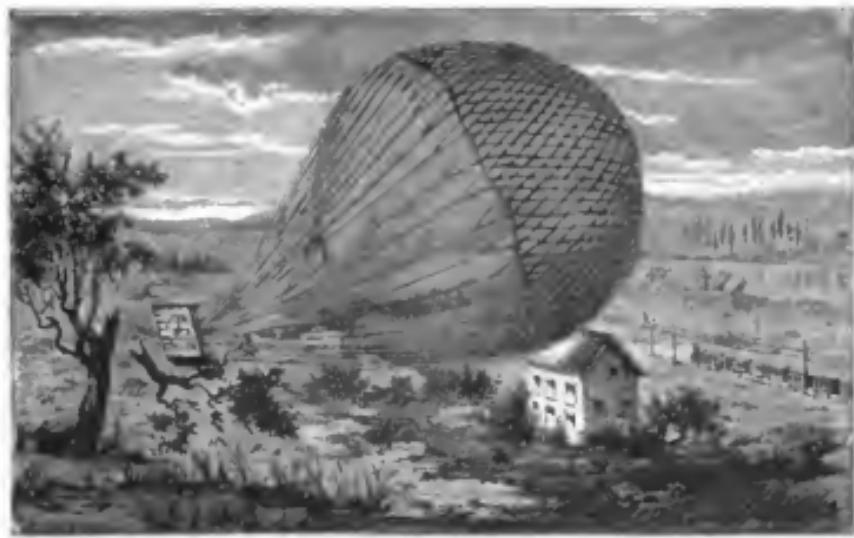
sexes earnestly begged a seat in the car. It was doubted only by the judicious few that the navigation of the air was *un fait accompli*, or that men might go where they pleased with the speed of the wind. The Duc de Chartres, afterwards Orleans and the notorious Egalité, was so unfortunate as to make a journey of one hundred and thirty-five miles in five hours without breaking his neck, thus escaping the best chance that ever happened to him of saving his name from imperishable dishonor. Great care and expense were lavished upon the construction of balloons, and no improvement has since been effected in them.

It was to be expected that among a people with so keen a sense of the ludicrous as the French, the new discovery should be made the object of pitiless burlesque and caricature. All manner of absurd flying-machines were represented in colored prints, and all sorts of ridiculous schemes were put forth in satirical prospectuses. But the irony and caricature could not exceed in the comic element the essays that were written and the plans that were set forth in sober earnest. Moralists gravely condemned the employment of bal-

loons, because they were manifestly contrary to the will of Divine Providence, which had not given wings to man; because they threatened to break down the barriers of virtue and morality, by permitting aéronauts to descend at night into gardens and balconies, and because they practically annulled the boundaries of empire, and thus seemed likely to involve nations in continual war. This was droll enough, but the novelties in aerial architecture sanguinely proposed to the public were more mirth-provoking still. One cannot look at an engraving of the "Minerva" without a smile. The "Minerva" was a machine for navigating the air, projected by one Robertson, of Vienna, in 1804, and dedicated to Volta, probably that it might come to be considered as a sort of "Voltaic pile." A pile it certainly appears of a balloon, a Fulton ferry-boat, a toy-shop, a ten-pin alley, a traveling circus, and a lager-bier saloon, as complex in its construction and as diverse in its aims as the new grand patent double action cylindrical marlinspike, with holystoning watering-pot attachment, and self-adjusting reversible Kampf-tulicon deck Awning-Carpet. The amiable Robertson proposed to convey sixty persons in the "Minerva," which was to have a capacity of carrying 150,000 pounds, and thought it

might be possible to make with it the tour of the world. In the serious description he gave of it, which is funnier than Mark Twain's explanation of his map of Paris, he refers to a gymnasium, a theatre, an observatory, a study, and other apartments not absolutely essential to aéronautic voyages, besides kitchens, closets, and store-rooms, any one of which adjuncts it would be about as easy to transport through the air as the Chapel of Our Lady of Loretto.

That no important advance has been made in the science of aérostation since the day of the earlier aéronauts, has been shown in the memorable voyage of the *Géant* from Paris across Northern Europe, in October, 1863. Nadar's great balloon was constructed in seeming contempt of the great forces with which it was to contend, and the fearful escape from death of himself and his companions proved that the perils of the airy deep are even greater than those of the ocean. Nine persons occupied Nadar's car, which was a two-story house of wickerwork, fitted with all appliances of comfort. For a night and a day the voyage was a reeling dream. Over the vine-clad hills of France, warm with the sunset; over the great manufacturing towns of Belgium, with their many-sprinkled lights flash-

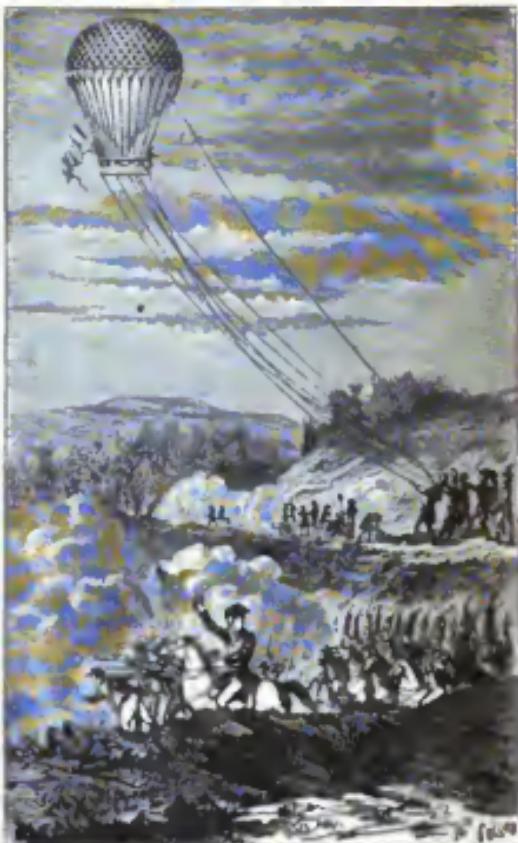


THE WRECK OF THE GÉANT.

ing like another starry firmament beneath them; over the green levels of Holland, with the shining network of its intersecting canals; over German châteaux, with the glint of sunrise on their fantastic gables, they sailed without noise or sense of motion; into dense fogs, shutting out all recognition of the world, they harmlessly entered, to emerge in the glory of the frost-rime crusting the balloon with silver, and in the exhilaration inspired by the reappearance\* of the wide panorama of the earth. But to this brief season of intense enjoyment there ensued the fearful time of the descent, when, having reached the surface, they were dashed about for hours against rocks and trees and houses, suffering a thousand deaths, until they were at last rescued with broken limbs and many contusions near Rehthen, in Hanover.

The employment of balloons in warfare, to give intelligence of the movements and probable strength of the enemy, goes back to the battle of Fleurus, in the year 1794. On that memorable occasion the balloon was first managed as a kite, as shown in the picture here given, and with the happiest results. In the late war in the United States, balloons were constantly used by the armies on both sides, and the generals of the Army of the Potowac were thus enabled absolutely to look down upon the gardens and squares of Richmond long before that obstinate capital fell into the hands of General Grant. At the present moment in Paris the balloon is of less importance as affording a look-out upon the Prussian parallels, than as a means of postal communication and of leaving the city. Many efforts have been made to enter Paris from without *par ballon monté*, but hitherto without success, and should some daring patriot effect a safe descent from the clouds into the *Champs Elysées*, it would be only a happy accident.\*

\* The latest invention designed for getting back into Paris, by M. Dupuy de l'Orme, is styled the



THE BALLOON AT THE BATTLE OF FLEURUS.

Were it indeed possible for General Trochu to communicate daily with the government at Tours, and with the army of the Loire, and to receive despatches from them, by balloon, with the same certainty and regularity as the trains of the Nord or the Ouest in peace time came into and departed from Paris, then the whole plan of modern warfare would be revolutionized. Then might come to pass truly the realization of the "vision of the world," beheld by Tennyson from the moorland around Locksley Hall, when he saw the heavens fill with commerce, agonies + magic sails, Pilots of purple twilight, dropping down with costly bales:

*Pneumaphilexiphère*, a name which one might suppose would be absolutely fatal to its buoyancy,